

### ABSTRACT OF THE DISCLOSURE

A processing system and method for chemical oxide removal (COR) is presented, wherein the processing system comprises a first treatment chamber and a second treatment chamber, wherein the first and second treatment chambers are coupled to one another. The first treatment chamber comprises a chemical treatment chamber that provides a temperature controlled chamber, and an independently temperature controlled substrate holder for supporting a substrate for chemical treatment. The substrate is exposed to a gaseous chemistry, such as HF/NH<sub>3</sub>, under controlled conditions including surface temperature and gas pressure. The second treatment chamber comprises a heat treatment chamber that provides a temperature controlled chamber, thermally insulated from the chemical treatment chamber. The heat treatment chamber provides a substrate holder for controlling the temperature of the substrate to thermally process the chemically treated surfaces on the substrate.